AMENDMENTS TO THE CLAIMS

The following claims replace all prior versions and listings of claims in the application:

1 (currently amended). A method of converging an adaptive filter of a communication channel between a near end and a far end, and having a hybrid connection responsible for transmission echo of near end signal, comprising the steps of:

initializing a nominal step size value and a penalty point value;

combining said nominal step size value and said penalty point value to generate a step size value; and

dynamically changing said step size value in response to a characteristic measure of a quality of said communication channel, wherein said step size value is ~~changed~~ decreased:

by adjusting said penalty point value when a tone originating from the far end of the communication channel is detected;

by adjusting said penalty point value when full convergence is achieved;

by adjusting said nominal step size value when an achieved combined loss is approximately 15 dB;

by adjusting said penalty point value when a power level of a residual error signal, P_e, is less than -60 dBm0 or a far-end channel signal, P_x, is less than -45 dBm0, that is when $P_e < -60$ dBm0 or $P_x < -45$ dBm0;

by adjusting said penalty point value when a level of said channel's near-end background noise is high; and

by adjusting said penalty point value when weak double-talk in said communication channel is detected.

Claims 2-7 (cancelled).

8 (original). The method of claim 1, wherein:

said step size value is reset by adjusting said nominal step size value when divergence is detected.

9 (original). The method of claim 1, wherein:

said penalty point value is reinitialized periodically.

10 (original). The method of claim 9, wherein:

said period of reinitializing said penalty point value is once every 40 samples.

11 (original). The method of claim 10, wherein:

said period corresponds to 5 ms for a 8 kHz sampling rate.

12. (cancelled)

13 (currently amended). The method of claim 10, wherein:

said step size value is ~~increased~~ decreased by adjusting said nominal step size value when a combined loss exceeds 15 dB.

14 (original). The method of claim 10, wherein:

said step size value, μ, is expressed by the equation $\log_2(\mu) = 1 + \log_2(\mu_0) - \log_2(f(P_x)) - \log_2(g(N)) - \rho$, where ρ represents said penalty point value, μ_0 represents said nominal step size value, $f(P_x)$ is a function of a far-end power measured within said channel, g(N) is a function of the taps of said adaptive filter; and

ρ has a positive or negative integer value of zero, one, or two assigned to it for every sample within said reinitializing period.

15 (currently amended). The method of claim ~~7~~ 1, wherein:

said weak double-talk is detected in said communication channel when a near-end speech signal is at least 6 dB less than a far-end speech signal and at least 12 dB above a noise floor.

16 (cancelled)

17 (original). A method of converging an adaptive filter of a communication channel, comprising the steps of:

initializing a nominal step size value and a penalty point value;

combining said nominal step size value and said penalty point value to generate a step size value; and

dynamically changing said step size value in response to a characteristic measure of a quality of said communication channel, wherein said step size value is changed by adjusting said nominal step size value.

18 (original). A method of converging an adaptive filter of a communication channel, according to claim 17, wherein said step size value is selectively changed by adjusting either said nominal step size value, said penalty point value, or both said nominal step size value and said penalty point value.